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Walker

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(54) **SYSTEM AND METHOD FOR ANALYZING ATHLETIC ACTIVITY**

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(58) **Field of Classification Search**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,270,564 A	9/1966	Evans
4,372,558 A	2/1983	Shimamoto et al.
4,373,651 A	2/1983	Fanslow

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2668946 A1	5/2008
CN	1101757 A	4/1995

(Continued)

OTHER PUBLICATIONS

Lovell, "A system for real-time gesture recognition and classification of coordinated motion," Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, 2005, <http://dspace.mit.edu/handle/1721.1/33290> (2 pages).

(Continued)

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(57) **ABSTRACT**

Various sensor systems are described herein, including inserts having sensors thereon, which are configured to be received in an article of footwear. The inserts may be connected to a sole member of the footwear, or may function as a sole member. The sensors may be piezoelectric sensors in some configurations. The system may also include an electronic module that is overmolded into the sole structure and includes a connector for external access.

30 Claims, 26 Drawing Sheets